RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 09/717,789C
Source: IFW16
Date Processed by STIC: 3/2/05

ENTERED

IFW16

RAW SEQUENCE LISTING DATE: 03/02/2005
PATENT APPLICATION: **US/09/717,789C** TIME: 13:08:34

Input Set : **A:\140140323U3.TXT**
Output Set: **N:\CRF4\03022005\I717789C.raw**

```
 4 <110> APPLICANT: Chiorini, John
 5       Kotin, Robert M.
 6       Safer, Brian
 8 <120> TITLE OF INVENTION: AAV5 VECTOR AND USES THEREOF
11 <130> FILE REFERENCE: 14014.0323U3
13 <140> CURRENT APPLICATION NUMBER: 09/717,789C
14 <141> CURRENT FILING DATE: 2000-11-21
16 <150> PRIOR APPLICATION NUMBER: PCT/US99/11958
17 <151> PRIOR FILING DATE: 1999-05-28
19 <150> PRIOR APPLICATION NUMBER: 60/087,029
20 <151> PRIOR FILING DATE: 1998-05-28
22 <160> NUMBER OF SEQ ID NOS: 26
24 <170> SOFTWARE: FastSEQ for Windows Version 4.0
26 <210> SEQ ID NO: 1
27 <211> LENGTH: 4652
28 <212> TYPE: DNA
29 <213> ORGANISM: Artificial Sequence
31 <220> FEATURE:
32 <223> OTHER INFORMATION: Description of Artificial Sequence; Note =
33       synthetic construct
35 <400> SEQUENCE: 1
36 tggcactctc ccccctgtcg cgttcgctcg ctcgctggct cgtttggggg ggtggcagct      60
37 caaagagctg ccagacgacg gccctctggc cgtcgccccc ccaaacgagc cagcgagcga     120
38 gcgaacgcga caggggggag agtgccacac tctcaagcaa gggggttttg taagcagtga     180
39 tgtcataatg atgtaatgct tattgtcacg cgatagttaa tgattaacag tcatgtgatg     240
40 tgttttatcc aataggaaga aagcgcgcgt atgagttctc gcgagacttc cggggtataa     300
41 aagaccgagt gaacgagccc gccgccattc tttgctctgg actgctagag gaccctcgct     360
42 gccatggcta ccttctatga agtcattgtt cgcgtcccat ttgacgtgga ggaacatctg     420
43 cctggaattt ctgacagctt tgtggactgg gtaactggtc aaatttggga gctgcctcca     480
44 gagtcagatt taaatttgac tctggttgaa cagcctcagt tgacggtggc tgatagaatt     540
45 cgccgcgtgt tcctgtacga gtggaacaaa ttttccaagc aggagtccaa attctttgtg     600
46 cagtttgaaa agggatctga atattttcat ctgcacacgc ttgtggagac ctccggcatc     660
47 tcttccatgg tcctcggccg ctacgtgagt cagattcgcg cccagctggt gaaagtggtc     720
48 ttccagggaa ttgaacccca gatcaacgac tgggtcgcca tcaccaaggt aaagaagggc     780
49 ggagccaata aggtggtgga ttctgggtat attcccgcct acctgctgcc gaaggtccaa     840
50 ccggagcttc agtgggcgtg gacaaacctg gacgagtata aattggccgc cctgaatctg     900
51 gaggagcgca aacggctcgt cgcgcagttt ctggcagaat cctcgcagcg ctcgcaggag     960
52 gcggcttcgc agcgtgagtt ctcggctgac ccggtcatca aaagcaagac ttcccagaaa    1020
53 tacatggcgc tcgtcaactg gctcgtggag cacggcatca cttccgagaa gcagtggatc    1080
54 caggaaaatc aggagagcta cctctccttc aactccaccg gcaactctcg gagccagatc    1140
55 aaggccgcgc tcgacaacgc gaccaaaatt atgagtctga caaaaagcgc ggtggactac    1200
56 ctcgtgggga gctccgttcc cgaggacatt tcaaaaaaca gaatctggca aatttttgag    1260
57 atgaatggct acgacccggc ctacgcggga tccatcctct acggctggtg tcagcgctcc    1320
```

RAW SEQUENCE LISTING DATE: 03/02/2005
PATENT APPLICATION: **US/09/717,789C** TIME: 13:08:34

Input Set : **A:\140140323U3.TXT**
Output Set: **N:\CRF4\03022005\I717789C.raw**

58 ttcaacaaga ggaacaccgt ctggctctac ggacccgcca cgaccggcaa gaccaacatc 1380
59 gcggaggcca tcgcccacac tgtgcccttt tacggctgcg tgaactggac caatgaaaac 1440
60 tttcccttta atgactgtgt ggacaaaatg ctcatttggt gggaggaggg aaagatgacc 1500
61 aacaaggtgg ttgaatccgc caaggccatc ctgggggct caaaggtgcg ggtcgatcag 1560
62 aaatgtaaat cctctgttca aattgattct acccctgtca ttgtaacttc caatacaaac 1620
63 atgtgtgtgg tggtggatgg gaattccacg acctttgaac accagcagcc gctggaggac 1680
64 cgcatgttca aatttgaact gactaagcgg ctcccgccag attttggcaa gattactaag 1740
65 caggaagtca aggacttttt tgcttgggca aaggtcaatc aggtgccggt gactcacgag 1800
66 tttaaagttc ccagggaatt ggcgggaact aaaggggcgg agaaatctct aaaacgccca 1860
67 ctgggtgacg tcaccaatac tagctataaa agtctggaga agcgggccag gctctcattt 1920
68 gttcccgaga cgcctcgcag ttcagacgtg actgttgatc ccgctcctct gcgaccgctc 1980
69 aattggaatt caaggtatga ttgcaaatgt gactatcatg ctcaatttga caacatttct 2040
70 aacaaatgtg atgaatgtga atatttgaat cggggcaaaa atggatgtat ctgtcacaat 2100
71 gtaactcact gtcaaatttg tcatgggatt ccccccctggg aaaaggaaaa cttgtcagat 2160
72 tttggggatt ttgacgatgc caataaagaa cagtaaataa agcgagtagt catgtctttt 2220
73 gttgatcacc ctccagattg gttggaagaa gttggtgaag gtcttcgcga gtttttgggc 2280
74 cttgaagcgg gcccaccgaa accaaaaccc aatcagcagc atcaagatca agcccgtggt 2340
75 cttgtgctgc ctggttataa ctatctcgga cccggaaacg gtctcgatcg aggagagcct 2400
76 gtcaacaggg cagacgaggt cgcgcgagag cacgacatct cgtacaacga gcagcttgag 2460
77 gcgggagaca acccctacct caagtacaac cacgcggacg ccgagtttca ggagaagctc 2520
78 gccgacgaca catccttcgg gggaaacctc ggaaaggcag tctttcaggc caagaaaagg 2580
79 gttctcgaac cttttggcct ggttgaagag ggtgctaaga cggcccctac cggaaagcgg 2640
80 atagacgacc actttccaaa aagaaagaag gctcggaccg aagaggactc caagccttcc 2700
81 acctcgtcag acgccgaagc tggacccagc ggatcccagc agctgcaaat cccagcccaa 2760
82 ccagcctcaa gtttgggagc tgatacaatg tctgcgggag gtggcggccc attgggcgac 2820
83 aataaccaag gtgccgatgg agtgggcaat gcctcgggag attggcattg cgattccacg 2880
84 tggatggggg acagagtcgt caccaagtcc acccgaacct gggtgctgcc cagctacaac 2940
85 aaccaccagt accgagagat caaaagcggc tccgtcgacg gaagcaacgc caacgcctac 3000
86 tttggataca gcacccccctg ggggtacttt gactttaacc gcttccacag ccactggagc 3060
87 ccccgagact ggcaaagact catcaacaac tactggggct tcagaccccg gtccctcaga 3120
88 gtcaaaatct tcaacattca agtcaaagag gtcacggtgc aggactccac caccaccatc 3180
89 gccaacaacc tcacctccac cgtccaagtg tttacggacg acgactacca gctgccctac 3240
90 gtcgtcggca acgggaccga gggatgcctg ccggccttcc ctccgcaggt ctttacgctg 3300
91 ccgcagtacg gttacgcgac gctgaaccgc gacaacacag aaaatcccac cgagaggagc 3360
92 agcttcttct gcctagagta ctttcccagc aagatgctga gaacgggcaa caactttgag 3420
93 tttacctaca actttgagga ggtgcccttc cactccagct tcgctcccag tcagaacctg 3480
94 ttcaagctgg ccaacccgct ggtggaccag tacttgtacc gcttcgtgag cacaaataac 3540
95 actggcggag tccagttcaa caagaacctg gccgggagat acgccaacac ctacaaaaac 3600
96 tggttcccgg ggcccatggg ccgaacccag ggctggaacc tgggctccgg ggtcaaccgc 3660
97 gccagtgtca gcgccttcgc cacgaccaat aggatggagc tcgagggcgc gagttaccag 3720
98 gtgcccccgc agccgaacgg catgaccaac aacctccagg gcagcaacac ctatgccctg 3780
99 gagaacacta tgatcttcaa cagccagccg gcgaacccgg gcaccaccgc cacgtacctc 3840
100 gagggcaaca tgctcatcac cagcgagagc gagacgcagc cggtgaaccg cgtggcgtac 3900
101 aacgtcggcg ggcagatggc caccaacaac cagagctcca ccactgcccc cgcgaccggc 3960
102 acgtacaacc tccaggaaat cgtgcccggc agcgtgtgga tggagaggga cgtgtacctc 4020
103 caaggaccca tctgggccaa gatcccagag acgggggcgc actttcaccc ctctccggcc 4080
104 atgggcggat tcggactcaa acacccaccg cccatgatgc tcatcaagaa cacgcctgtg 4140
105 cccggaaata tcaccagctt ctcggacgtg cccgtcagca gcttcatcac ccagtacagc 4200
106 accgggcagg tcaccgtgga gatggagtgg gagctcaaga aggaaaactc caagaggtgg 4260

RAW SEQUENCE LISTING DATE: 03/02/2005
PATENT APPLICATION: US/09/717,789C TIME: 13:08:34

Input Set : A:\14014032 3U3.TXT
Output Set: N:\CRF4\03022005\I717789C.raw

```
107 aacccagaga tccagtacac aaacaactac aacgaccccc agtttgtgga ctttgccccg    4320
108 gacagcaccg gggaatacag aaccaccaga cctatcggaa cccgatacct tacccgaccc    4380
109 ctttaaccca ttcatgtcgc ataccctcaa taaaccgtgt attcgtgtca gtaaaatact    4440
110 gcctcttgtg gtcattcaat gaataacagc ttacaacatc tacaaaacct ccttgcttga    4500
111 gagtgtggca ctctcccccc tgtcgcgttc gctcgctcgc tggctcgttt ggggggggtgg    4560
112 cagctcaaag agctgccaga cgacggccct ctggccgtcg ccccccccaaa cgagccagcg    4620
113 agcgagcgaa cgcgacaggg gggagagtgc ca                                   4652
115 <210> SEQ ID NO: 2
116 <211> LENGTH: 390
117 <212> TYPE: PRT
118 <213> ORGANISM: Artificial Sequence
120 <220> FEATURE:
121 <223> OTHER INFORMATION: Description of Artificial Sequence; Note =
122       synthetic construct
124 <400> SEQUENCE: 2
125 Met Ala Leu Val Asn Trp Leu Val Glu His Gly Ile Thr Ser Glu Lys
126  1               5                  10                  15
127 Gln Trp Ile Gln Glu Asn Gln Glu Ser Tyr Leu Ser Phe Asn Ser Thr
128             20                  25                  30
129 Gly Asn Ser Arg Ser Gln Ile Lys Ala Ala Leu Asp Asn Ala Thr Lys
130         35                  40                  45
131 Ile Met Ser Leu Thr Lys Ser Ala Val Asp Tyr Leu Val Gly Ser Ser
132     50                  55                  60
133 Val Pro Glu Asp Ile Ser Lys Asn Arg Ile Trp Gln Ile Phe Glu Met
134 65                  70                  75                  80
135 Asn Gly Tyr Asp Pro Ala Tyr Ala Gly Ser Ile Leu Tyr Gly Trp Cys
136                 85                  90                  95
137 Gln Arg Ser Phe Asn Lys Arg Asn Thr Val Trp Leu Tyr Gly Pro Ala
138             100                 105                 110
139 Thr Thr Gly Lys Thr Asn Ile Ala Glu Ala Ile Ala His Thr Val Pro
140         115                 120                 125
141 Phe Tyr Gly Cys Val Asn Trp Thr Asn Glu Asn Phe Pro Phe Asn Asp
142     130                 135                 140
143 Cys Val Asp Lys Met Leu Ile Trp Trp Glu Glu Gly Lys Met Thr Asn
144 145                 150                 155                 160
145 Lys Val Val Glu Ser Ala Lys Ala Ile Leu Gly Gly Ser Lys Val Arg
146                 165                 170                 175
147 Val Asp Gln Lys Cys Lys Ser Ser Val Gln Ile Asp Ser Thr Pro Val
148             180                 185                 190
149 Ile Val Thr Ser Asn Thr Asn Met Cys Val Val Val Asp Gly Asn Ser
150         195                 200                 205
151 Thr Thr Phe Glu His Gln Gln Pro Leu Glu Asp Arg Met Phe Lys Phe
152     210                 215                 220
153 Glu Leu Thr Lys Arg Leu Pro Pro Asp Phe Gly Lys Ile Thr Lys Gln
154 225                 230                 235                 240
155 Glu Val Lys Asp Phe Phe Ala Trp Ala Lys Val Asn Gln Val Pro Val
156                 245                 250                 255
157 Thr His Glu Phe Lys Val Pro Arg Glu Leu Ala Gly Thr Lys Gly Ala
158             260                 265                 270
```

RAW SEQUENCE LISTING DATE: 03/02/2005
PATENT APPLICATION: US/09/717,789C TIME: 13:08:34

Input Set : A:\140140323U3.TXT
Output Set: N:\CRF4\03022005\I717789C.raw

```
159 Glu Lys Ser Leu Lys Arg Pro Leu Gly Asp Val Thr Asn Thr Ser Tyr
160         275                 280                 285
161 Lys Ser Leu Glu Lys Arg Ala Arg Leu Ser Phe Val Pro Glu Thr Pro
162     290                 295                 300
163 Arg Ser Ser Asp Val Thr Val Asp Pro Ala Pro Leu Arg Pro Leu Asn
164 305                 310                 315                 320
165 Trp Asn Ser Arg Tyr Asp Cys Lys Cys Asp Tyr His Ala Gln Phe Asp
166                 325                 330                 335
167 Asn Ile Ser Asn Lys Cys Asp Glu Cys Glu Tyr Leu Asn Arg Gly Lys
168             340                 345                 350
169 Asn Gly Cys Ile Cys His Asn Val Thr His Cys Gln Ile Cys His Gly
170         355                 360                 365
171 Ile Pro Pro Trp Glu Lys Glu Asn Leu Ser Asp Phe Gly Asp Phe Asp
172     370                 375                 380
173 Asp Ala Asn Lys Glu Gln
174 385                 390
176 <210> SEQ ID NO: 3
177 <211> LENGTH: 610
178 <212> TYPE: PRT
179 <213> ORGANISM: Artificial Sequence
181 <220> FEATURE:
182 <223> OTHER INFORMATION: Description of Artificial Sequence; Note =
183       synthetic construct
185 <400> SEQUENCE: 3
186 Met Ala Thr Phe Tyr Glu Val Ile Val Arg Val Pro Phe Asp Val Glu
187  1               5                  10                  15
188 Glu His Leu Pro Gly Ile Ser Asp Ser Phe Val Asp Trp Val Thr Gly
189             20                  25                  30
190 Gln Ile Trp Glu Leu Pro Pro Glu Ser Asp Leu Asn Leu Thr Leu Val
191         35                  40                  45
192 Glu Gln Pro Gln Leu Thr Val Ala Asp Arg Ile Arg Arg Val Phe Leu
193     50                  55                  60
194 Tyr Glu Trp Asn Lys Phe Ser Lys Gln Glu Ser Lys Phe Phe Val Gln
195 65                  70                  75                  80
196 Phe Glu Lys Gly Ser Glu Tyr Phe His Leu His Thr Leu Val Glu Thr
197                 85                  90                  95
198 Ser Gly Ile Ser Ser Met Val Leu Gly Arg Tyr Val Ser Gln Ile Arg
199             100                 105                 110
200 Ala Gln Leu Val Lys Val Val Phe Gln Gly Ile Glu Pro Gln Ile Asn
201         115                 120                 125
202 Asp Trp Val Ala Ile Thr Lys Val Lys Lys Gly Gly Ala Asn Lys Val
203     130                 135                 140
204 Val Asp Ser Gly Tyr Ile Pro Ala Tyr Leu Leu Pro Lys Val Gln Pro
205 145                 150                 155                 160
206 Glu Leu Gln Trp Ala Trp Thr Asn Leu Asp Glu Tyr Lys Leu Ala Ala
207                 165                 170                 175
208 Leu Asn Leu Glu Glu Arg Lys Arg Leu Val Ala Gln Phe Leu Ala Glu
209             180                 185                 190
210 Ser Ser Gln Arg Ser Gln Glu Ala Ala Ser Gln Arg Glu Phe Ser Ala
```

RAW SEQUENCE LISTING DATE: 03/02/2005
PATENT APPLICATION: **US/09/717,789C** TIME: 13:08:34

Input Set : **A:\140140323U3.TXT**
Output Set: **N:\CRF4\03022005\I717789C.raw**

```
211          195                 200                 205
212 Asp Pro Val Ile Lys Ser Lys Thr Ser Gln Lys Tyr Met Ala Leu Val
213      210                 215                 220
214 Asn Trp Leu Val Glu His Gly Ile Thr Ser Glu Lys Gln Trp Ile Gln
215 225                 230                 235                 240
216 Glu Asn Gln Glu Ser Tyr Leu Ser Phe Asn Ser Thr Gly Asn Ser Arg
217                 245                 250                 255
218 Ser Gln Ile Lys Ala Ala Leu Asp Asn Ala Thr Lys Ile Met Ser Leu
219             260                 265                 270
220 Thr Lys Ser Ala Val Asp Tyr Leu Val Gly Ser Ser Val Pro Glu Asp
221          275                 280                 285
222 Ile Ser Lys Asn Arg Ile Trp Gln Ile Phe Glu Met Asn Gly Tyr Asp
223      290                 295                 300
224 Pro Ala Tyr Ala Gly Ser Ile Leu Tyr Gly Trp Cys Gln Arg Ser Phe
225 305                 310                 315                 320
226 Asn Lys Arg Asn Thr Val Trp Leu Tyr Gly Pro Ala Thr Thr Gly Lys
227                 325                 330                 335
228 Thr Asn Ile Ala Glu Ala Ile Ala His Thr Val Pro Phe Tyr Gly Cys
229             340                 345                 350
230 Val Asn Trp Thr Asn Glu Asn Phe Pro Phe Asn Asp Cys Val Asp Lys
231          355                 360                 365
232 Met Leu Ile Trp Trp Glu Glu Gly Lys Met Thr Asn Lys Val Val Glu
233      370                 375                 380
234 Ser Ala Lys Ala Ile Leu Gly Gly Ser Lys Val Arg Val Asp Gln Lys
235 385                 390                 395                 400
236 Cys Lys Ser Ser Val Gln Ile Asp Ser Thr Pro Val Ile Val Thr Ser
237                 405                 410                 415
238 Asn Thr Asn Met Cys Val Val Val Asp Gly Asn Ser Thr Thr Phe Glu
239             420                 425                 430
240 His Gln Gln Pro Leu Glu Asp Arg Met Phe Lys Phe Glu Leu Thr Lys
241          435                 440                 445
242 Arg Leu Pro Pro Asp Phe Gly Lys Ile Thr Lys Gln Glu Val Lys Asp
243      450                 455                 460
244 Phe Phe Ala Trp Ala Lys Val Asn Gln Val Pro Val Thr His Glu Phe
245 465                 470                 475                 480
246 Lys Val Pro Arg Glu Leu Ala Gly Thr Lys Gly Ala Glu Lys Ser Leu
247                 485                 490                 495
248 Lys Arg Pro Leu Gly Asp Val Thr Asn Thr Ser Tyr Lys Ser Leu Glu
249             500                 505                 510
250 Lys Arg Ala Arg Leu Ser Phe Val Pro Glu Thr Pro Arg Ser Ser Asp
251          515                 520                 525
252 Val Thr Val Asp Pro Ala Pro Leu Arg Pro Leu Asn Trp Asn Ser Arg
253      530                 535                 540
254 Tyr Asp Cys Lys Cys Asp Tyr His Ala Gln Phe Asp Asn Ile Ser Asn
255 545                 550                 555                 560
256 Lys Cys Asp Glu Cys Glu Tyr Leu Asn Arg Gly Lys Asn Gly Cys Ile
257                 565                 570                 575
258 Cys His Asn Val Thr His Cys Gln Ile Cys His Gly Ile Pro Pro Trp
259             580                 585                 590
```

VERIFICATION SUMMARY DATE: 03/02/2005
PATENT APPLICATION: **US/09/717,789C** TIME: 13:08:35

Input Set : **A:\14014032 3U3.TXT**
Output Set: **N:\CRF4\03022005\I717789C.raw**